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Virginia Wildlife

Dedicated to the Conservation of Virginia's Wildlife and Related Natural Resources and to the Betterment of Outdoor Recreation in Virginia

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COVER: Sparrow hawk (American kestrel), by Roger T. Flythe of Abingdon, Virginia.

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EDITORIAL

WASTE NOT—WANT NOT

SO the old saying goes, but there are some that think such sage advice is a little dated. Secretary-treasurer J. S. Craiger of the Iowa Soft Drink Association was recently quoted in the "Environmental Action Bulletin" as saying, "The throw-away trend represents a value-ethic choice for the consumer." The deposit idea, he said was founded on an old belief that waste was sinful—"but today wasting is no longer widely recognized as sinful. We all throw away." Mr. Craiger applied this bit of philosophy specifically to the proposal that all drink bottles carry a deposit and whether he would, himself, apply it more broadly we don't know, but there are certainly many in our society who would. In fact, as he says, "we all throw away" and thus are guilty of some degree of waste, or at least of inefficiency. Next to the prospect of development, wastes of one sort or another probably constitute the greatest threat to our outdoors today. A recent issue of the "Conservation Foundation Letter" summed up the impact of wastes pretty well.

"The implications of the nation's failure to reuse more waste materials, or dispose of them more sensibly, are enormous, not only in terms of wasted money but because of these environmental effects:

"*Air Pollution*—Incineration and open burning of wastes causes air pollution. So do activities such as the demolition of old buildings, which can disperse particles of asbestos and other dangerous materials. Open dumps cause obnoxious odors. Methane gas is another by-product.

"*Water Pollution*—Water sources are easily contaminated by 'leachate' from landfills and dumps, which is far more deleterious than raw sewage; runoff from animal feedlots; acid drainage from mining wastes. Mine tailings and other industrial wastes and sludges—including the hazardous variety—are dumped into ponds, lakes and oceans.

"*Land Pollution*—Scenic blight is caused by open dumps and by litter and junk piles, in both cities and rural areas. Land values are depressed, and community development is hampered. At the same time, the shortage of land itself is becoming so serious that many cities figure they have only a few years more worth of space for filling operations.

"*Resource Depletion*—Solid wastes contain large amounts of paper, glass, minerals and other ingredients which are valuable and largely squandered. At the same time, many of these materials are being imported, and worldwide scarcities are foreseen. Further, energy resources are of critical concern, and it generally requires far more energy to process virgin raw materials than to reuse or recycle the same materials from waste.

"*Economic Costs*—Billions of dollars a year are spent in the United States on solid waste collection and disposal. Because of the widespread inefficiency and wastefulness, the public is surely paying large amounts which could be available for other purposes."

Our current energy crisis, even though it may be a problem of distribution rather than available resources, certainly points out how extravagant use of a commodity whose supply is limited can rapidly affect us all. Our desires to create new jobs, increase the gross national product, and enjoy the best of the good life must be weighed against the possibility of such impending crises. The wise old saying may yet prove truer than the current generation is willing to admit.—H.L.G.

LETTERS

Pulling Our Leg?

IT is a true pleasure to receive *Virginia Wildlife*, and being a member of the fraternity I can appreciate the effort that must be expended to consistently be informative and entertaining too.

I can't refrain from this sidelight: On the letter to your editor—"Why Does a Duck . . .?" then the photo by Harrison accompanied by editor's comments—I ask, doesn't everyone know that if that duck were to raise that other leg, he would fall flat on his bill??

H. C. Thatcher
Editor, "Bucktails and Buckshot"
Raleigh, North Carolina

License Dilemma

MY wife and I were to meet our parents from West Virginia for a fishing trip. Saturday afternoon I contacted the Clerk, the only license agent in the county, about selling them a trout license only to find the office closed. Why not have several people available to do this?

Grafton E. Skaggs
Richmond

We regret that you and your parents experienced difficulty in obtaining licenses. We are frequently asked this question, but we are allowed to appoint agents only with the permission of the Clerk unless specifically authorized by the legislature. Consequently, a number of Virginia counties have only one agent.—Ed.

Stocking Private Lakes

I recently purchased 50 acres of land in Henry County with two lakes which I have renovated. I would like to stock the lakes with fish—bass, crappie or some other appropriate type—and would like to find out where to get them and what financial or other assistance I might get from state or federal agencies.

Ronald D. Doyle
Martinsville

The Game Commission does not furnish fish for private stocking since this service is provided by the U. S. Soil Conservation Service using fish supplied by U. S. Fish and Wildlife Service hatcheries. The fish are available with no strings attached for new and renovated ponds approved by the local SCS representative. Applications are available at their offices or from Game Commission district fish biologists who are always glad to examine private ponds and make suggestions for renovation or stocking.—Ed.

By OZZIE WORLEY

DECAYING, twisted trees and clumps of bushes poke out of the murky water.

You can let your imagination run rampant and envision an alligator sliding from a log with a splash.

You can close your eyes and imagine you are fishing in the Dismal Swamp, the Everglades—any swamp—only you aren't.

Bass in such places?

If you hadn't found out otherwise, you'd quickly conclude that the chances were minimal. But, as a fisherman willing to take a chance, you'd be sorry that you jumped to such a conclusion.

These places that resemble miniature swamps are farm irrigation ponds scattered throughout southwestern and central Virginia tobacco-growing country.

The primary purpose of the ponds—in counties like Franklin and Pittsylvania—is to provide water to irrigate tobacco crops. They have a secondary purpose—fishing—and that's what caught my fancy.

The ponds vary from tiny ones of an acre or less to larger ones of two to four acres. They are located in hollows, ravines and similar low places where the artificial small impoundments are easy to form.

Their source of water is a spring, a branch or perhaps run-off from rains. Rude sod or earthen dams hold the water.

Robert Kendrick from Roanoke provided my entree to fishing three of them.

Kendrick is a native of Pittsylvania County. As a result, he knows where the ponds are located, who owns them, and how to wangle permission to fish them.

He is a good fellow to serve as your guide, because the ponds are in isolated places secluded from the tobacco fields. If you weren't led to them by someone who knows where they lie, you could walk within a good cast of them and fail to spot them.

On several occasions, Kendrick had described his good luck in the ponds and invited me to try them. I'd always had some reason for declining—perhaps subconsciously thinking of them as places to waste your time fishing for scrawny bluegills.

But one late July day, when fishing luck hovered around zero in most of my favorite places, I took up Kendrick.

The early morning air promised a boiling hot day when Kendrick picked me up at 5:30. We drove from Roanoke to the first pond in a little more than one hour.

This proved to be the larger of the three impoundments we visited during the day. It covered about four acres. After parking the car, we reached the pond by walking a path along the fringes of a cornfield.

Kendrick had a 14-foot boat—and a homemade paddle carved from a piece of a board—pulled up in the brush near the bank. We loaded our tackle aboard and shoved off.

The late Mr. Worley was managing editor of the *Roanoke World News* and a frequent contributor to this magazine.

As soon as we were only a few yards from shore, we started casting among the floating logs, brush and other obstacles that dotted the pond.

Kendrick, who had caught two- to three-pound largemouths in this impoundment in the past, said his best luck had come on small black plastic worms. That's what he fished with all day.

With the mist simmering over the pond in the early morn, it seemed an appropriate time to try top-water lures. Therefore, I started with a Baby Torpedo.

Within a few minutes, Kendrick caught one bass and had two other runs on his plastic worm. Taking due note of this, and receiving no response to my Baby Torpedo, I switched to a black worm, too.

As Kendrick paddled us toward the far end of the pond, a thunderous sound broke the stillness. The throbbing noise emanated from a pump that two men clad in overalls were manning to suck water from the pond. They were irrigating an adjacent tobacco field.

I waved to one of them, neighbor-like. He returned the gesture, walked to the water's edge, cupped his hands to his mouth and yelled over the pump's noise: "What time is it?"

I glanced at my watch and told him. It must've been the hour to move the irrigation pipes to another field, because in a matter of minutes the two men cut the motor and departed with the pump.

Before Kendrick and I left this pond to sample two others, each of us had landed several 8- to 9-inch bass on the worms—far short of the kind my host had been catching. He looked at me apologetically as we pulled the boat ashore.

I was chagrined to learn subsequently that on the following day a local man landed a 6½ pounder there.

The second pond we visited was much smaller—about two acres—than the first, but much more prolific. This one was in a gully and you reached the water by taking a steep path downhill to the lake's edge.

No boat was necessary here. You could walk around it to fish, being careful to dodge bushes and briers that grabbed for you along the shore.

This lake was pockmarked with dead trees and brush, which afforded excellent cover for fish. It was the shallowest one we hit, certainly no more than five or six feet at its deepest point. A nearly dry branch trickled into it from the opposite end of its tiny dam.

Sizing up the layout of this one, I removed the plastic worm and replaced it with a No. 3 Mepps spinner. It was a good choice. I hooked a small bass on my second or third cast. In rapid order, I brought in four more—all about nine inchers.

Kendrick and I split. He headed around the pond one way, and I the other.

I caught another bass, my largest so far (about 10 inches) and then hooked a fish that didn't react like a bass. It was a crappie, which I didn't expect to find in water such as this. But my biggest surprise lay ahead.

It came in the third pond, which we tackled after our lunch of pork and beans, Vienna sausage, crackers and soda pop. The car's trunk served as our lunch table.

As we munched on the food, a pickup truck pulled into the dirt road leading into the tobacco field and stopped near us. John Hayden, who owned both the pond we'd just fished and the next one on the agenda, got out and grinned at Kendrick. They were old friends, back from the days when Robert lived in the area.

Robert introduced me to Hayden, throwing in the very important information that he, too, was a fisherman. "Hey, haven't I read your stuff in *Virginia Wildlife?*" he asked.

I confessed to that—and offered him a Vienna sausage. He declined that morsel, but we soon engaged in a spurt of fish-talk—like the time that he float-fished the James River from Eagle Rock to Springwood in Botetourt County.

"Go on, fish all you want to—and keep all you catch," Hayden said as he prepared to begin pinching blooms from tobacco in the adjacent field.

The third pond was only a couple hundred yards downhill from the car. It was even smaller than the

Author Ozzie Worley hefts a surprise catch—a 3½ pound smallmouth.

second one—only an acre or so. It was more shallow than usual, because irrigation water had been drawn from it shortly before our arrival.

By the time we reached it, I was soaked with perspiration. It was the middle of the day, hot and certainly not the greatest time to catch bass.

Kendrick walked to the far end to begin casting his plastic worm. I chose the middle, and stuck with my spinner which had been so productive in the second pond.

I'd made only a couple of exploratory casts, when Kendrick hailed me.

"Hey, Ozzie," he yelled in an excited voice, "come down here quick. There're two big bass swimming side by side right on top the water and they won't touch this worm."

I scrambled along the dirt path to where he was, fully expecting to see 10- or 12-inch bass.

When I saw them, my eyes widened and my throat got drier than it already was. These were jumbo bass.

"Try your spinner on them," Kendrick urged.

"Don't know if it'll do any good, Robert," I remarked like a fishing authority; "I've seen them swimming around on top like that before and usually they won't hit a thing—not even live bait."

Having made this sage observation, I flipped the spinner directly in front of the cruising bass.

Robert Kendrick grins with a small bass caught on plastic worm.

Sneaky tactics are sometimes required. Robert Kendrick hides beside tree to cast into pond.

Before the blade could turn more than twice, one of them socked the Mepps. I jerked. The fish took off like a demon. It headed for a pile of brush. I reeled it away from that obstacle but had a first-class battle on my hands.

I finally began steering it toward the bank where we stood, but another problem cropped up. We were on a steep place—created when the lake had been pulled down earlier in the day—and the bass was in a position below me where I couldn't reach it.

There wasn't anything to try except a "no-no"—horse it up on the bank towards me with a hefty jerk. I did. This time it worked.

The bass was jumping in the weeds between Kendrick and me. He pounced on it with both hands.

After he got a tight grip, he examined it closely, and glanced up at me with a puzzled look. "I've never seen anything like this in these ponds before," he cried; "it's no largemouth bass."

Admiring its bronze beauty, I set him straight.

"No, sir, that's a smallmouth and a big one for any size pond."

When I stooped to remove the spinner from its mouth, I got another surprise. The bass had broken off two of the lure's three hooks. The remaining one barely held the fish in the lip.

We weighed it on the spot with Kendrick's scales. It went 3½ pounds and was 18 inches long.

I shook my head in disbelief. Where'd I been all those 10 to 15 years that these irrigation ponds had been stocked?

MILE HIGH

BIRDWATCHING

Text and Photos by TONY DECKER
Marion

ON July 25, 1888, William C. Rives, Jr., M.D., of Washington, D. C., left Glade Spring, then a Norfolk & Western Railway stop in Washington County, and traveled to Whitetop Mountain (5,529 feet), presumably by horse and buggy. After a journey of about twenty miles he arrived that evening at the Miller Hotel on Whitetop, just above where Forest Service Road 89 now enters the bald. Thus began the study of the Canadian Zone bird life of Virginia.

This high area, having thousands of acres above the 4,500 foot level, has intrigued bird students, professional and amateur, ever since. Virginia's distinguished ornithological scholar, Dr. J. J. Murray, of Lexington, teamed with the Smithsonian Institution's Dr. Alexander Wetmore on three important collecting trips. These were in September 1935, June 1936, and May and June 1937. In former days birding may have been more exciting. On one occasion Murray and Wetmore beat a judicious retreat when the wind brought the heady odor of fermenting mash. Moonshiners were quicker on the trigger then, strangers fewer and apt to be 'revenooers.'

Others, less widely known, have added to the information. Fred Behrend of Elizabethton, Tennessee, deserves special mention for a long standing interest in the high altitude birds of the Southern Appalachians. Especially well catalogued are the various "Christmas Counts," sponsored by the National Audubon Society, and conducted by local bird clubs.

Often called 'the rooftop of Virginia,' this high area is located where the three counties of Grayson, Smyth, and Washington meet. Streams flow generally southward into the New River, or northward into the Holston's South Fork. The villages of Trout Dale, Konnarock, and Whitetop lie at the foot of the mountains. The larger towns of Marion, Independence, and Damascus are near enough to serve as operating bases for visitors.

Good highways have replaced the wagon roads of Dr. Rives' day. The bird watcher from Richmond can leave home and be focusing his binocular on Whitetop birds in about the same length of time it took Dr. Rives to travel from Glade Spring in 1888.

All of Virginia above five thousand feet in elevation is in this area, and probably more than three-quarters of that above forty-five hundred feet.

The basic rock is igneous, unlike the surrounding sedimentary shales and limestones. These hard igneous rocks resist rapid erosion, and some scenic formations on Pine Mountain and Haw Orchard Mountain are the results. These supply an unusual niche for bird use.

Most of the spruce and fir forests of Virginia are concentrated here, offering a bird habitat like that of Canada. The associated smaller plants are very important to many nesting birds. Along with rhododendron, mountain laurel, and azalea—all justly famous for their bloom—there are viburnums, elderberries, mountain ash, choke and pin cherries, huckleberries, and many more.

On the large open areas of Pine Mountain and the natural bald on Whitetop grow a variety of grasses and herbs which supply the needs of birds that nest on open ground. Ferns and other sporophytic plants contribute variety in all types.

In the late sixties, as part of the development work for the Mount Rogers National Recreation Area, Jefferson National Forest, I attempted to bring together the scattered ornithological information. Letters, interviews, and digging into records old and new resulted in a worthwhile list of birds. Ninety-three well authenticated species have been recorded for the area above forty-five hundred feet. There are about thirty additional species which might be added by field work at the proper seasons.

Among the birds recorded are eleven species of birds of prey, including the golden eagle; six woodpeckers; five thrushes, besides the robin and bluebird; two

Equipment for open high elevation birding includes 20 power spotting scope.

Mile High Birdwatching (Continued from page 7)

vireos; thirteen warblers; and nineteen of the sparrow-grosbeak-finch family. The birds range from the ubiquitous starling and common crow to such rarities as both of the crossbills, redpolls, and snow buntings.

Of course, the birds to be seen depend on the season of the year. Migration in spring or fall are the best times to see the most species. Summer can also reward the birder as he checks on the nesting birds, of which at least twenty-five species make the high country home. Of course, more work needs to be done on the nesting records. Then, there is always the chance of a new species to add to the list, for which a card file is maintained at the U. S. Forest Service office in Marion.

May, when warbler migration is on, is probably the best time to visit the high country. June is also very good as the resident males sing from conspicuous perches as they guard their territories. Wetmore and Murray recorded forty-five bird species May 31 to June 4, 1937, on Mount Rogers. Fall migration in September and October can be rewarding for the colorful scenery as well, and the weather is still generally warm, even above five thousand feet.

Those who like their birding rugged can try the Audubon Society's "Christmas Count." These counts take place within a two-week period which includes both Christmas and New Year's. Since 1952 there have been ten counts. They have varied in results from a low of eight species with twenty-one individual birds in 1967, to a high of twenty-four species in 1954, and over five hundred individual birds in the count of 1966. A total of thirty-two species were tallied in all the Christmas Counts. This is a good list, considering that many of these counts were made on stormy days, with the temperature below zero, and deep snow on the ground.

Those bird watchers who yearn to add to knowledge of the area have a good chance to increase the list of recorded species. In my various trips to the area, usually in the course of my former work with the U. S. Forest Service, I was able to add eight species, including the redpoll. Even the ordinary barn swallow seemed unrecorded prior to my seeing it about an old building on the Elk Garden field. The thirty 'probable' species mentioned above offer a challenge.

The habitat is not static. A rapid die-off of mature spruce and fir on Whitetop and Mount Rogers is taking place. A good stand of young trees is taking over among the dead trunks. A change of bird species is inevitable as a result. While this dynamic change is taking place, a survey of the changing bird life would be most appropriate. The old building on the Elk Garden field was torn down in 1970, and the large wooden dance hall on Whitetop in 1972. A man-made nesting niche attractive to barn and rough-winged swallows was thus removed. Will these species no longer use the high country?

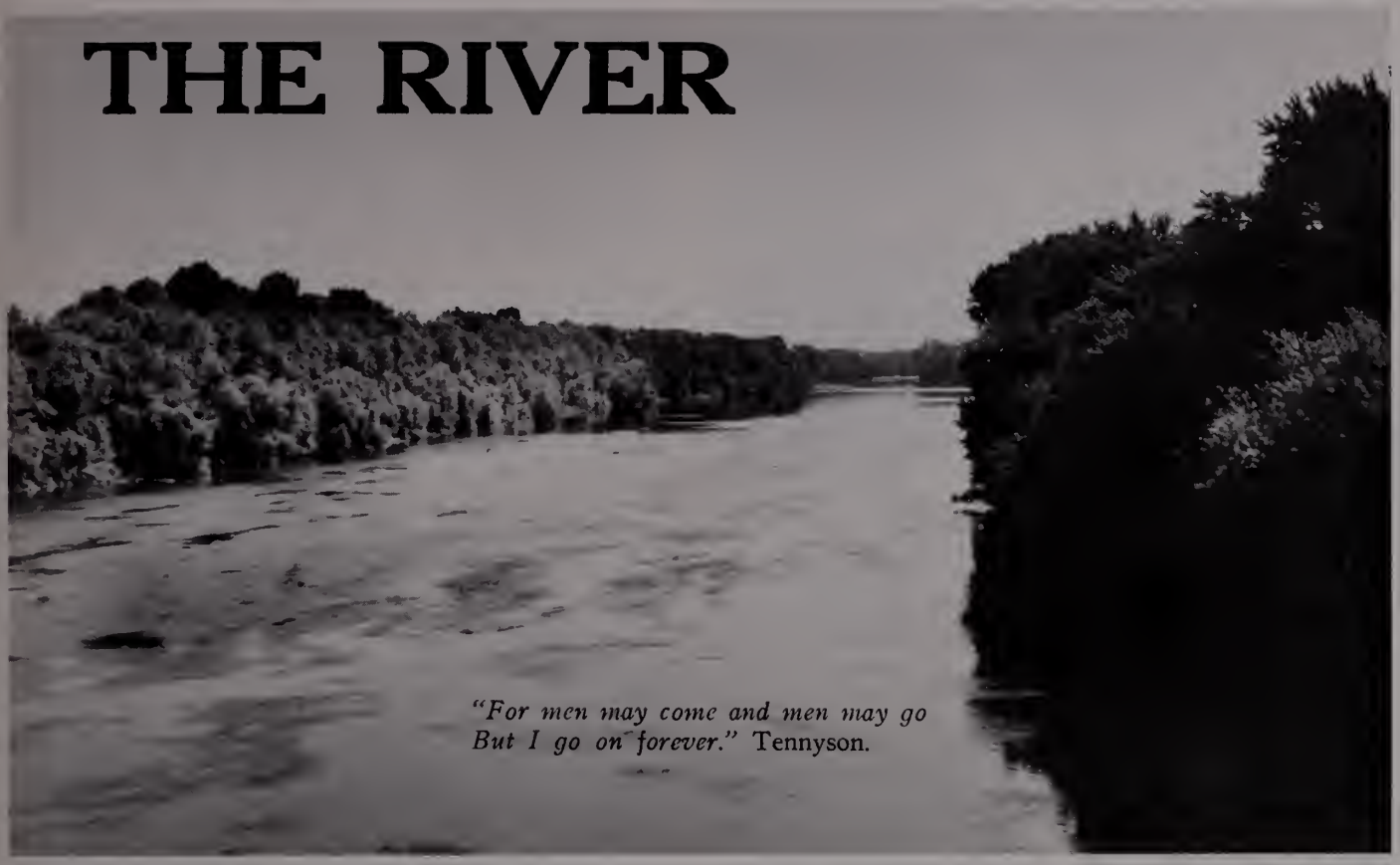
There are not many places in Virginia where you can go birding in spruce and fir forests. Except for the Whitetop-Mount Rogers-Pine Mountain area, there are none where you can bird above five thousand feet of elevation. Foot trails, plus a motor road to Whitetop, make all this accessible. A livery stable operates in summer at Fairwood, west of Trout Dale, by arrangement with the U. S. Forest Service. The five thousand to fifty-five hundred foot elevations of Pine Mountain, with their thousands of acres of grasslands, rhododendron thickets, picturesque rock formations, and burgeoning young stands of red spruce and Fraser fir can readily be reached by those who care to ride a horse.

If you want bird watching that is different, pack your binocular and guide book and head for the Whitetop-Mount Rogers-Pine Mountain area in southwest Virginia.

Bird Species Recorded Above 4500 Feet in the Whitetop-Pine Mountain-Mount Rogers Area of Southwest Virginia

1. Turkey Vulture
2. Black Vulture
3. Sharp-Shinned Hawk
4. Cooper's Hawk
5. Red-Tailed Hawk
6. Red-Shouldered Hawk
7. Broad-Winged Hawk
8. Golden Eagle
9. Sparrow Hawk
10. Ruffed Grouse
11. Bobwhite Quail
12. Woodcock
13. Black-Billed Cuckoo
14. Great Horned Owl
15. Barred Owl
16. Chimney Swift
17. Ruby-Throated Hummingbird
18. Yellow-Shafted Flicker
19. Pileated Woodpecker
20. Red-Headed Woodpecker
21. Yellow-Bellied Sapsucker
22. Hairy Woodpecker
23. Downy Woodpecker
24. Phoebe
25. Least Flycatcher
26. Wood Pewee
27. Horned Lark
28. Rough-Winged Swallow
29. Barn Swallow
30. Blue Jay
31. Raven
32. Common Crow
33. Black-capped Chickadee
34. Carolina Chickadee
35. Tufted Titmouse
36. White-Breasted Nuthatch
37. Red-Breasted Nuthatch
38. Brown Creeper
39. House Wren
40. Winter Wren
41. Bewick's Wren
42. Catbird
43. Brown Thrasher
44. Robin
45. Wood Thrush
46. Hermit Thrush
47. Swainson's Thrush
48. Gray-Cheeked Thrush
49. Veery
50. Bluebird
51. Golden-Crowned Kinglet
52. Ruby-Crowned Kinglet
53. Sprague's Pipit
54. Cedar Waxwing
55. Starling
56. Solitary Vireo
57. Red-Eyed Vireo
58. Black-and-White Warbler
59. Nashville Warbler
60. Parula Warbler
61. Magnolia Warbler
62. Cape May Warbler
63. Black-Throated Blue Warbler
64. Black-Throated Green Warbler
65. Blackburnian Warbler
66. Chestnut-Sided Warbler
67. Blackpoll Warbler
68. Ovenbird
69. Yellow-Throat
70. Canada Warbler
71. Meadowlark
72. Common Grackle
73. Brown-Headed Cowbird
74. Scarlet Tanager
75. Cardinal
76. Rose-Breasted Grosbeak
77. Indigo Bunting
78. Evening Grosbeak
79. Purple Finch
80. Common Redpoll
81. Pine Siskin
82. Common Goldfinch
83. Red Crossbill
84. White-Winged Crossbill
85. Rufous-Sided Towhee
86. Savannah Sparrow
87. Vesper Sparrow
88. Carolina Junco
89. Chipping Sparrow
90. Field Sparrow
91. White-Throated Sparrow
92. Song Sparrow
93. Snow Bunting

THE RIVER



"For men may come and men may go
But I go on forever." Tennyson.

By TED FEARNOW, *Chairman*
Middle Atlantic Environmental Council
Berkeley Springs, West Virginia

FROM the beginning of recorded history, man has been attracted to rivers. Serving as highways for early settlers, they charted the course for his expansion to new areas. Their flood waters have frequently caused the destruction of his communities. They have been man's humble servant at times, but on other occasions they have become his stern master. A great river is a complex phenomenon, reaching out its tentacles in numberless tributaries like a giant octopus, drawing sustenance from the land. The history of one civilization after another is closely interwoven with that of rivers: the Nile, the Tiber, the Danube.

American pioneers were attracted to the great watercourses of our eastern seaboard from the very beginning. Even today, when man is released from the work needed to earn his daily bread, he tends to move toward the river's edge for solitude, recreation and enjoyment. Tennyson's lines were addressed to "The Brook," but he expressed a thought that has doubtless occurred to countless thousands as they gazed at the surging waters of a great river and meditated on the transient nature of man's tenure on the earth.

No river in America is more deeply rooted in history and tradition than the James. The influence of this great river can be seen in the economic and cultural development of Virginia and the United States. The westward migration of early settlers crept slowly up this majestic stream for almost a century until Governor Spotswood and his Knights of the Golden Horseshoe gazed westward into the beautiful Shenandoah Valley and returned with glowing accounts that spurred others to push on. The story of the fisheries resource in the James River is, of itself, an epic illustrating the hopes, the dreams and the errors that have had an impact on many of our great watercourses.

Virginia's James River and its tributaries occupied a prominent place in the fisheries of the colonies and our young and expanding nation. Early explorers and settlers along the waters of this great river system recorded glowing accounts of fishes that flourished on every hand and provided an important element of food for the inhabitants.

Writing of the early struggles of the Virginia colony, Captain John Smith recorded: "We are plagued with so much sickness that the living were scarcely able to bury the dead. The chief cause was our want of sufficient and good victuals. We were continually watching, four or five each night, at these bulwarks. We had great store of sturgeon only . . . ."

Much of the early development of Virginia, including the establishment of a high level of culture for a new colonial settlement, may be attributed to the wealth of fisheries that awaited exploitation and enabled settlers to establish a relatively high standard of living. Phillip Bruce points out that "Fish of the most delicate and nourishing varieties were caught with hook or net, or speared at the very door; among

 (Continued from page 9)

the kinds, the perch and shad, the bass, pike and sheepshead. Oysters and shell fish, without previous planting, could be scooped up by the bushel from the bottom of the nearest inlet or tidal stream." During the period when pioneers were struggling to clear and break land for the plow, this abundant source of food must have seemed like manna from heaven.

While some found in the abundant aquatic resource a means of livelihood, the settlers who turned to agricultural pursuits found in fishing an effective means for varying the family diet and a very enjoyable source of sport. A deep-rooted interest in the sporting aspects of angling continues to flow strongly through the veins of Virginians.

Beverly's history of Virginia records that the most exciting branch of this sport (fishing) was known as "striking," a method that had been adopted from the Indians. "A blazing light was obtained by burning pine knots in a brazier raised above the bow of the boat, and as the boat glided along the surface of the stream in the darkness, the bright light attracted the fish and also made them clearly visible in the water below. A person skilled in handling the weapon employed in this sport was able to secure a great number of very fine fish in a single night." This method of taking fish is well-known to anglers of the present time as "gigging" or "spearing," and many contemporary Virginians have thrilled to the sport of spearing fish at night by the light of a gasoline lantern. That this form of fishing is rooted in the distant past is further established by Thomas Hariot, who described John White's visit to Virginia in 1585. Hariot records, in language of the period, that fish were an important item in the diet of native aborigines at that time, saying: "The inhabitants used to take them in two manner of ways, the one is by a kind of wear (net) made of reedes which in that country are very strong. The other way, which is more strange, is with poles made sharp at one end, by shooting them into the fish after the manner as Irishmen cast darts; either as they are rowing in their boats or else as they are wading in the shallows for the purpose."

So effective is this method of taking fish that it has been a factor in bringing about reduction in numbers of some species, particularly in small and clear freshwater streams.

The annual "runs" of shad in the James River, as they ascended to spawn were periods of great activity for commercial fishermen and plantation owners alike. To Virginians the shad held a position of esteem similar to that which New Englanders reserved for the cod. The 1902 report of the U. S. Commissioner of Fish and Fisheries comments that "The Shad catch is an important feature of the fisheries of Virginia, the most of it being taken in pound nets, of which many are owned and worked by planters who farm near the fishing grounds." An earlier report of the Commissioner gives the annual catch (1883) of fish (all species) from the James River and its tributaries as 3,750,000 pounds.

Full descriptions of the James River watershed at the time white men first arrived are not available, but such references as have been found indicate that the area was predominantly forested. From the very beginning of occupancy by white men, fire became one of the chief destroyers of forests in the James River basin. Indeed, the Indians were responsible for forest fires even before the arrival of white men. Captain John Smith, describing deer hunts by the Indians, wrote: "Having found deer they surround them with many fires, and betwixt the fire they place themselves. Some take their stand in the midst. They chase the deer then frightened by the fires and the voices, so long within the circle that they often kill six, eight, ten, or fifteen at a hunting."

Doubtless, fires have always been responsible for maintaining some open areas in the forest. Aside from those started by Indians and white men, lightning could logically be expected to cause a considerable number of fires. However, the James watershed as a whole must have been forested and relatively stable, prior to the arrival of the white man. The mass effort of a growing population was required to regularly "churn" the soil by annual plowing and cultivation to develop a full-scale erosion problem.

Settling first along the James River and gradually working up every important tributary, the activities of man tended to eliminate forest cover on watersheds and erosion problems became a feature of the landscape. Tobacco was quickly adopted by Virginia colonists as a profitable cash crop, and one for which a ready market existed in the mother country. As the planters moved farther back into the Piedmont area in search of new land for tobacco production, the rolling hills were plowed and planted. The heavy drain of tobacco plants on the soil, plus the fact that this type of agriculture requires frequent cultivation, resulted in heavy losses of soil through erosion. Experience has demonstrated that this is an important element in damaging the fisheries resource in most rivers.

It is apparent, however, that Virginians never forgot or overlooked the value of the James River fishery during this era, and indeed there is evidence that they were searching to find the cause of diminished returns from the resource as early as the year 1800. The Virginia Calendar of State Papers shows that on March 3, 1804, John Moody was appointed by the Executive to be "Surveyor of the Falls of James River" by virtue of an act entitled "An Act for the More Effectually Preventing Obstructions to the passage of fish in James River and its navigable Branches." Another entry in the same volume records a "Contract between John Moody, Surveyor of the Falls of James River,

Irish Creek

U. S. Forest Service

and William Woodward, by which the said Woodward bound himself in the penalty of five hundred dollars to furnish all the necessary boats, tools, and hands and supplies, and to remove all the obstructions in the said Falls to the passage of fish, as described by the Act of the 24th of January, 1803, all to be completed to the satisfaction of said Moody prior to June 1st next." Ample care was taken to ward off chills and pneumonia among the workmen as shown by the following statement taken from the Calendar of Virginia State Papers:

Commonwealth of Virginia for John Moody,	March 30, 1804 Dr.
To 14 quarts Spirits for 36 men for 7 days' work in Falls of James River @ 33½	$ 4.69
To advertising in Argus, 3 times	1.50
To do political repository 3 times	1.50
To ferriages	.50
To William Woodward, his services	100.00
	$108.19

In addition to the natural obstructions which caused early fishermen along the James River concern, man-made obstructions in the form of dams to generate water power introduced a new source of difficulty, not only on the main James River but on the numerous tributaries and their small branches. Many of these installations formed effective barriers to the passage of fish, and citizens who were awake to the implications of this situation made valiant efforts to arouse the public to action. Professor Spencer F. Baird, of the Smithsonian Institution, Washington, D. C., was among the leaders in bringing this matter to the attention of the states and on October 2, 1872, Mr. M. McKenzie, of the University of Virginia, in response to inquiries from Professor Baird replied as follows: "As you are aware, I have been much interested in this question for several years, but I fear that little can be done until some cunning leech is able to apply some plaster to our people which shall arouse them to a sense of duty to themselves and to their children."

About ten years later, records reveal that the U. S. Commissioner of Fish and Fisheries requested Dr. W. M. Hudson, Commissioner of Fish and Fisheries for the State of Connecticut, to inspect the fishway of Bosher's Dam a few miles above Richmond to "report on the working of the McDonald Fishway," indicating that the need for means to maintain the passage of fishes was receiving some recognition. The McDonald fishway is one of a number of "fish ladders" designed to permit fish to pass over dams that would otherwise bar their passage. Unfortunately, fishways are only partially successful, and we are forced to conclude that man-made obstructions forged another link in the chain of events that reduced the status of the James River fishery.

Dams built to divert water into canals became another factor affecting the important fishery for shad and other migratory fishes. Construction of the James River and Kanawha Canal undoubtedly had an adverse effect upon the fish fauna, probably from the creation of obstructions to free movement up and down stream, but even more so from the soil disturbance and erosion entailed by a construction feat of such magnitude in the flood plain. We may well reflect upon the fact that development projects which involve large-scale disruptions to watercourses often cause impairment of aquatic resources which continue long after the development itself has been outmoded. An excerpt from a promotional brochure, "An Appeal for the James River and Kanawha Canal," provides an example of rosy promises held forth to the public . . . : "Virginia can establish a Great American Central Water Line, which will reach from the wharves of Norfolk to the very bases of the Rocky Mountains—which, passing East through the very heart of the Nation, and past the great controlling points of western, southwestern and interior trade, shall gather and control the vast commerce of this Region—making our own James a mightier highway of trade than the Hudson, and Norfolk a mightier city than New York." The canal promoters had dreams of linking the James to the Ohio River system and thence through the Mississippi and Missouri to "the base of the Rockies." Abandoned locks and other reminders of this highly touted waterway may still be seen as far upstream as Lexington, Virginia, which was served for a time by canal boats.

But the mighty James continues its flow to the sea with many of man's ill-conceived devices now eradicated or obscured by vegetation. Under modern scientific protection and management the James is being gradually restored to productivity. The application of modern forestry and soil conservation technology is pointing the way toward better watersheds, which will produce a better river. As Tennyson so aptly stated it: "men may come and men may go but I go on forever." This is the way of THE RIVER.

Who's Afraid of Virginia's Wolf?

By JAMES A. SULLIVAN
Division of Forestry and Wildlife Sciences
Virginia Polytechnic Institute and State University

SPIDERS, like wolves, are both feared and appreciated. Just as the wolf's howl is menacing, yet compelling, so the spider is distasteful, yet intriguing. Among Virginia's "predators" is a spider which, due to its habits and appearance, has been christened "wolf" (Greek: Lycosa).

Members of the genus *Lycosa,* one of the more common genera of the wolf spider family (Lycosidae), are medium to large spiders of dull browns, grays, and blacks. They have an oval abdomen, an oval cephalothorax, long tapering legs, and two horizontal rows of four eyes each on the face. Viewed eye to eye, the wolf spider is at once both appealing and repulsive. The two median eyes of the upper row are large and dark, and, combined with the apparent smile on the apparent lips, impart a happy feeling. The bearded face, the spines on his hairy legs, and his scurrying speed, however, make the viewer itchingly uncomfortable.

In actuality, the true mouth is hidden from view by the two large poison-injecting cheliceras. The pair of pedipalps, which in the female appear to be an extra, though somewhat short, pair of legs, serve a sensory function. In the male, these pedipalps are much more massive, and are important in reproduction.

Unlike the familiar orb-weaving spiders, wolf spiders generally do not spin webs to catch their prey. Many, like the mammalian wolf, are wandering predators. They can be seen running through the grass, lurking under stones or logs in moist meadows or along the banks of rivers and ponds. They support themselves by searching for small insects which are the bulk of their diet. Their long slender legs are well adapted for the chase, and are indispensable in that last pounce upon the prey.

Most *Lycosa* build either temporary or permanent retreats. The retreat may be a shallow silk-lined excavation under a stone or log. More often, however, the wolf spider will dig a vertical channel in the earth, as much as a foot deep, and line it with silk. The mouth of the tube may be surrounded with a wall of earth and pebbles, or with a turret of grass, dirt, or other available materials held together with silk. Within the turret, the wolf spider may sit for hours in wait for unwary prey to happen along. In the winter, the wolf spider will close the mouth of the retreat with a door made much the same way as the turret, and await the spring.

The female is quite a sight with the silk case in which she deposits her eggs. Until the developing spiderlings are ready to emerge, the female will guard the sac which she carries attached to the silk-producing spinnerets on her abdomen. The female eventually opens the egg sac along a weak equatorial seam, the young swarm out by the hundreds, and climb onto their mother's back where they remain until able to fend for themselves.

Spiders are usually detested, either for their habits or appearance, or for the infrequent painful bite. They deserve more, however. They do us little harm, and, in fact, are beneficial in helping to control those insects which more directly interfere with man's habits.

Predators are forever in the midst of controversy. They are both respected and appreciated for their ever important role in the ecological scheme, yet at the same time are scorned for their unpretentious dietary habits. The wolf spider's unsightly appearance elicits a visceral discomfort, leaving untold his true value in insect control. In the same way, the offensive appearance of other predators may hide their true beneficial roles.

The wolf spider's sleek body is carried along on eight long tapering legs. The large Cheliceras (below the apparent lips) actually hide the mouth, and the pair of hairy pedipalps are sensory.

VIRGINIA WILDLIFE

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CONSERVATIONGRAM

Commission Activities and Late Wildlife News . . . At A Glance

DOCTOR JAMES R. KNIGHT, JR., OF WARSAW, VIRGINIA, has been appointed to a six-year term with the Virginia Commission of Game and Inland Fisheries by Governor Linwood Holton. The appointment became effective July 1, 1973. As the new representative from the First Congressional District, Dr. Knight succeeds M. Gardner Smith of Gloucester, Va., who has served as Commissioner from that district since 1967. Following receipt of his D.D.S. at the University of Tennessee in 1956, Dr. Knight worked with the Virginia Health Department, the U.S. Public Health Service in South Dakota, and U.S. Coast Guard in Baltimore, Maryland. In 1960 he established his private practice in Warsaw, Va., where he and his wife, the former Mary Lois Gilliam, and their three children make their home.

CONSTRUCTION HAS STARTED ON A NEW LAKE near Keokee in Lee County, Virginia, according to Jack Hoffman, Chief of the Game Commission's Fish Division. The 106 acre fishing lake has been in the works since the mid 1960's with its planning involving a number of state and federal agencies as well as the Penn-Virginia Company who controlled the surface mineral rights in the area. Penn-Virginia has relinquished both their easement and mineral rights so as not to jeopardize development of the new lake. In addition to fishing, the lake area will offer campgrounds, hiking trails, and a picnic area.

PARK SERVICE LIMITS USE OF SHENANDOAH NATIONAL PARK as part of its extended permit system which is designed to protect fragile National Park backcountry areas. The program, generally, provides that hikers and campers must obtain a free permit to use specified trails in the remote backcountry areas. Permits will be limited to numbers which trails and campsites can accommodate without environmental damage. The program does not affect normal visitor use of developed park areas or campsites reached by automobile. Permits are issued on a first come, first serve basis.

DR. JOSEPH J. SHOMON, former Chief of the Education Division of the Virginia Commission of Game and Inland Fisheries, has embarked on yet another career. Just retired as Chief of the Audubon Society's Nature Center Planning Division, a position he has held since 1961, Dr. Shomon will make a world-wide trip, including Africa, and complete several books he has under contract. His long-range plans involve film lectures, consulting work, and, eventually, a little saltwater fishing. Dr. Shomon's very active retirement comes after more than 30 years of service in the field of conservation education, including the Civilian Conservation Corps, the Tennessee Valley Authority, the Virginia Commission of Game and Inland Fisheries, and the National Audubon Society.

Shooting the .22 WMR

By BILL ANDERSON
Grundy

I HAD hunted all morning without spotting a groundhog, when one suddenly stood up in the center of the small clover field. I stopped in a half crouched position. His back was toward me, and he had not yet sensed my presence.

The chuck was about seventy-five yards from me and as still as the limestone boulders on the hillside above me. I silently dropped into the clover in a sitting position, aimed at the base of the chuck's neck and squeezed the trigger. At the crack of the rifle the animal disappeared in the foot-high vegetation.

The little forty grain hollow-point bullet had brought instant death. He had not moved after the bullet struck. I picked him up and noted that the bullet had entered just below the neck and exited from the chest, leaving a large wound channel. A centerfire twenty-two bullet would probably have blown the animal apart but would not have killed more quickly.

I am basically a hunter, not a shooter, although I do some reloading and burn hundreds of rounds of ammunition each year. I am not interested in blasting a groundhog at umpteen hundred yards with a ten pound ultra-magnum rifle spitting little bullets at three-thousand plus fps. I cut my teeth in the squirrel woods and enjoy stalking my game until I can see it well.

When I first started hunting groundhogs, I used the same caliber .22 rimfire rifle and hollow-point ammunition that I used for plinking and squirrel hunting. I quickly discovered that unless the hunter was very careful, the long rifle bullet would cripple more chucks than it killed.

In 1959 Winchester introduced the .22 Winchester magnum rimfire.

I was introduced to the little magnum by a hunter-friend, Cecil Breeding. On a chuck hunt together Cecil praised the merits of his rifle then quietly went about proving its worth by shooting several chucks out to, and perhaps beyond, one hundred yards.

My first twenty-two magnum was a Winchester slide action, Model 275.

On the range I was not disappointed. Although the magnum is not quite as accurate as the highly refined long rifle, it shoots flatter. Shooting from rest my rifle gave two minute accuracy at one hundred yards. Although this does not compare favorably with most centerfire varmint guns, it is good enough for crows or chucks out to one hundred yards.

I shot both the full jacket and the jacketed hollow point ammunition. Both bullets weigh forty grains and are equally accurate. However, the solid bullet has a very stiff jacket and offers much resistance to expansion. Its penetration was twice that of the hollow-point, but damage to the test material (compressed newspapers) was slight.

The magnum bullet proved to deflect easily, especially if the bullet hit a small branch near the gun's muzzle, enough to completely miss a one-foot square target at forty yards if they contacted the small branches.

The .22 magnum bullet leaves the gun at about two-thousand feet per second and with 350 foot pounds of muzzle energy. That compares favorably with the long rifle's velocity of 1315 fps and energy of 142 pounds. At one-hundred yards the magnum is still traveling at 1390 fps and has 170 foot pounds of energy.

Several years ago several companies manufactured a rifle known as the .22 WRF (.22 Special). Apparently there are several of the old rifles still around as ammunition is still loaded in this caliber. In fact, the old .22 special may live on awhile for it has been found that the .22 magnum rifles fire this cartridge quite well.

Out of curosity I invested in a small supply of .22 special ammunition for my magnum. These cartridges worked somewhat rough through the action of my rifle, apparently due to their being shorter than the magnum cartridges. Accuracy was good at normal squirrel ranges; however, some adjustment of the sights had to be made as the special ammunition shot to a lower point of impact than did the magnum bullets.

The .22 magnum rimfire has not been accepted especially well. This may be due, in part, to the price of the ammunition as compared with the cost of long rifle cartridges. Ammunition cost probably had an effect on the demise of the .22 Special rifle.

Many who hunt with heavy barreled centerfire rifles scoff at the little magnum, but for the man who shoots well and can stalk, or if he does not want to invest two-hundred dollars plus in a rifle and scope, the magnum may be his varmint gun.

THE GATHRIGHT
WILDLIFE MANAGEMENT AREA
Then and Now

By J. E. (NED) THORNTON
Supervising Game Biologist

SOMETIME in September 1976, if all goes according to plans, the Project Engineer for the United States Army Corps of Engineers in charge of the Gathright Project will push a button or turn a valve and the cool, clean waters of the Jackson River above the Gathright Dam will slowly begin to rise. Twelve months or so later, depending upon the amount of rainfall and snow, the Gathright Lake will at last come into being. It will be a marvel of engineering skill and something that the U. S. Corps of Engineers can point to with pride. It will, however, be the end of the Gathright Wildlife Management Area as the hunters and fishermen have known it in the past. For sure, it won't be wiped out and there will be something like 13,000 acres left, but the real heart of the management unit will be forever covered with water.

The Gathright Wildlife Management Area in Bath and Alleghany counties was the first major public hunting area acquired by the Virginia Commission of Game and Inland Fisheries under its policy of purchasing and managing land for public hunting and fishing.

The 18,392-acre tract includes a 14-mile stretch of the Jackson River that has few, if any, equals in Virginia as far as scenery is concerned. It enters the valley which includes the Gathright property through the Richardson Gorge, a narrow, cliff-lined road, paralleling the swift white water of the river, and flows through the rich bottom land which makes up the guts of the Gathright unit. It leaves the valley as it flows through the Kincaid Gorge—a spectacular gorge of cliffs and white water, the likes of which it would be difficult to find anywhere. It is in this gorge the U. S. Corps of Engineers are in the process of building their dam. Once the Jackson enters the valley through the Richardson Gorge, it meanders through the rich agricultural bottom land, passing beneath high scenic cliffs covered with ferns and mosses and around oxbows, sometimes almost meeting itself as it flows toward the James. It passes through stretches of turbulent white water with occasional pools of quiet, clear mountain water—until it reaches the Kincaid Gorge. Here it's all white, with giant boulders and rocks scattered throughout the gorge.

The Gathright property has a history which goes back many years. The area contains a number of prehistoric Indian sites and indications of Indian villages and camps are common. Indian burial sites have been found throughout the bottom land. Indian artifacts are still to be found, and the State Archeologist is doing an intensive survey in an effort to gather information on the use of the area by Indians before it is finally and forever covered by the water backed up by the Gathright Dam. An original grant from George the Second, granting much of what is now the Gathright property to John Robinson, James Wood, and John Lewis, was issued in 1743.

Much closer in time, T. M. Gathright, Sr., and his wife acquired the bulk of the land making up the management area in the late 1920's. During that same period, the Virginia Public Service Company, now VEPCO, acquired part of this area and acquired floodage rights and the right to purchase certain other areas. It was the intent of the power company to construct a dam to produce power on the Jackson River, but the crash of 1929 put an end to this plan. Although the power company owned part of the land in fee and held flooding easements over most of the remainder, T. M. Gathright occupied and had exclusive control of the property during his lifetime.

During the period 1932-1947, Mr. Gathright operated the property as a private hunting club with a membership of 100. The membership fee was $150 per member per year, and Hickory Lodge, the main part of which was built prior to the Civil War, was maintained and used to provide lodging and meals. In the operation of the club, Mr. Gathright catered

Game Commission photo by M. R. Cutler

Refuge supervisor Andy Huffman inspects some beaver activity on the area.

Gathright (Continued from page 15)

to wealthy people or people in high places in government or industry. His roster of members included United States senators, congressmen, business executives, and professional people. In 1947, the club was disbanded, but the property continued to operate as a private hunting and fishing club on a day or season basis. During all this time, it had a reputation of being one of the best hunting areas in the western part of Virginia. Mr. Gathright was a great believer in winter feeding and during his lifetime carried on a heavy winter feeding program for both deer and wild turkey. At the time the Commission came into possession of the property, it contained possibly the highest population of deer and wild turkey of any area of equal size in the state of Virginia.

Timberwise, it is made up almost entirely of hardwoods. It was cut for sawtimber prior to 1930, and many of the hollows still have signs of the old tramway which was used to carry the logs to the sawmills. In addition, nearly all of the area that could be reached has been cut for pulpwood and sawtimber since 1948. As a result, there remained only scattered stands of merchantable material, mostly in the form of pulpwood, when it came into public ownership.

From the time the Game Commission assumed possession of the property in July, 1958, the management objectives have been to provide the hunters and fishermen of Virginia with the maximum recreation possible on an area managed specifically for hunting and fishing. The rich bottom land through which the Jackson flows received the most attention. Most of the agricultural lands are leased out for corn production, with some of the crops being left in the fields as wildlife food. The larger fields have been divided into smaller fields with cover strips of autumn olives and white and red pine plantings. When it is impractical to lease the fields for crops, small game food patches are planted adjacent to good cover, primarily for quail. Fields that are not planted are mowed or bush-hogged periodically to keep them from reverting to brush lands. In the forested areas, wildlife management, carried out primarily through timber management, is designed to produce maximum wildlife benefits, with continued production of deer browse one of the main goals. Mast production is encouraged by retaining a high percentage of the forest land in native hardwoods. In order to provide hunter access to areas west of the river, three "swinging foot bridges" have been built at key points. Three primitive campgrounds have also been cleared to give the overnight hunter and fisherman a place to camp for short periods of time.

Perhaps, the biggest single contribution of the Gathright wildlife management area to the state's wildlife program is the brood stock of wild turkeys that have been live-trapped from the area and released in other areas to provide future additional huntable populations. Releases from these birds have provided and are continuing to provide new and expanding populations of wild turkey in many areas, particularly in the southwestern part of Virginia, where wild turkeys have been absent for many years. Well over 600 of those birds have been trapped and released since this program was initiated in 1958 and a number of counties in this section are enjoying both a fall and spring hunting season for wild turkey as a result.

The Jackson River itself is stocked with approximately 15,000 trout each year to provide over 24,000 man-days of excellent trout fishing. Altogether, a minimum of 40,000 man-days of outdoor recreation in the form of hunting and fishing and related activities are provided each year to the sportsmen of Virginia.

And now comes the dam!

In 1946 a dam across the Jackson River in the Kincaid Gorge was proposed by the Corps of Engineers and the project was authorized for construction in 1946. Support for the dam came mostly from the citizens of Alleghany County, but it was opposed by Mr. Gathright and his friends and the project was abandoned temporarily. A review was requested by the 80th Congress, 2nd Session, and another report was prepared. Construction funds were appropriated in 1953, and it was revealed in a "general design memorandum" that the economic feasibility of the project was marginal at that time and the project

deferred again for restudy. The project was "brought to life" again in 1964.

In November 1964, the Bureau of Outdoor Recreation concluded that it would not be in the best interest of providing balanced outdoor recreation opportunity within the region which would be served by the Gathright Reservoir to impound the free-flowing Jackson River and inundate the most fertile and productive portions of the Gathright public hunting area, and recommended that its construction not be undertaken at that time. But this recommendation and the recommendation of other organizations both public and private notwithstanding, the project was approved by Congress and the first money for construction was appropriated in 1965. Since that year, work has proceeded slowly and in increments, based on appropriations for the project. Following a delay caused by court action brought about by those interested in preventing further construction of the dam, work was resumed in the spring of 1973. As of June of this year (1973) approximately 35 percent of the project has been completed and work is continuing apace. The final cost of the completed project is estimated now to be at least $41,800,000.

According to the Corps of Engineers, it will, when completed, form a lake of 2,530 acres. The lake will back water 12 miles up the river from the dam and have a shoreline of 43.5 miles. It is designed to have a maximum drawdown of 28 feet but 8 out of 10 years, so say the Engineers, the drawdown will be 10 feet or less. The intake tower, just above the entrance to the outlet tunnel, will have a built-in, multilevel inlet design which will provide for the controlled release of water at several levels, permitting oxygenated water from the surface and cold water from the bottom of the reservoir to be mixed, thus providing suitable trout water for at least 10 miles downstream from the dam.

Commission photo by Cutler

The Jackson River

Whereas in the past the Jackson River has not been considered navigable and thus belongs to the landowner through whose land it flows, the Corps of Engineers now has said that the river is a navigable stream and is therefore public water, thus assuring fishermen access to the river. Even if future court action declares the river is not navigable, the engineers feel that the investment in the fishing features of the dam "assures federal commitment to providing necessary control of these waters," thus making them available to the public. Nevertheless, the ten miles or so of the river downstream from the dam will, according to fisheries biologists, make for some of the best trout waters in the state of Virginia. The Corps has already acquired six river access sites below the dam.

So, what are the benefits to be produced by the dam and the reservoir that it will form? The Engineers say it will control a 344-square-mile drainage area and that benefits will accrue to industrial, commercial and residential properties on the Jackson River; it will assist in improving the water quality of the Jackson and James Rivers and will augment the natural river flow during periods of low flow. It will provide nearly year-round opportunity for boating, water sports, fishing and camping.

To provide for the above, what are we losing? First, a considerable amount of taxpayers' money—based on the Engineers' estimate of $41,800,000. This estimate includes the cost of an estimated 18,000 cubic yards of backfill concrete needed for a cut-off wall made necessary by the large cavities found in the left abutment of the dam. At least 10 miles of the Jackson River and its tributaries will be inundated and lost forever—along with the gorge itself. The excellent trout and smallmouth bass waters will be lost in the reservoir—as will the white-water canoe stream, the scenic cliffs, and the still pools of the river. The rich bottom-land fields—the very guts of the management area and the primary nursery for the wildlife population on the unit and which largely account for the high concentration of game and exceptional hunting opportunity—will be flooded by the lake. Practically all of the small game (quail and rabbits) will be wiped out by the lake. Recreational development possibilities in the unique bottom land and adjacent river banks will be wiped out forever.

When the dam goes in, the Commission of Game and Inland Fisheries will be forced to make do with what is left—which, for the most part, will be steep ridge slopes and mountaintops. Tentative plans call for an attempt to compensate for the loss of the open bottom land by creating wildlife openings on the ridge tops where the soil will justify it, and planting them to herbaceous game food and cover where practical. The long hollows remaining will be "daylighted" through timber sales and eventually planted to permanent wildlife foods, such as grasses and clover.

White Snakeroot

POISONOUS PLANTS

At Your Doorstep

By JOHN E. SKEEN & JAMES A. SULLIVAN
VPI&SU, Blacksburg

HE knew exactly what he was doing. In part, his actions were ritualistic, but primarily they were scientific. The Pygmy chieftain carefully selected bark from this plant, cleaned young roots from that, and methodically ground the mixture of several species with a stone. Adding water and spittle, he boiled his concoction to a paste.

He knew what he was doing just as the chieftain before him had known. The effects of some plants duplicated each other; effects of others were complementary. Some species added body to the paste. But the end result was virtually assured. The objective was the swift arrow-borne death of the Pygmies' prey.

Just as the Pygmy chieftain is careful and knowledgeable in the use of his nearby plants, it is the wise sportsman and naturalist who can identify and knowingly treat his nearby plants.

Of hundreds of plant species occurring in our area, comparatively few are poisonous. Some merit can be found for nearly any plant, even the dangerously poisonous ones. These same plants, which may cause sickness or death if misused, may also provide pleasure by the beauty of their flowers, growth form, or fruits, or may provide compounds of important medicinal value.

It is because of the attractiveness of some poisonous plants that many poisonings occur. Most people are aware of the dangerous animals that occur in our area, learn to identify them, and avoid them. Probably few can recognize the dangerous plants which may be as deadly as the much-awed rattlesnake. Recognition of dangerous plants affords nearly complete protection to the cognizant person since it is he who must contact plants and not vice versa.

In 1884, numerous cattle in the state of Kansas showed symptoms of what was first diagnosed as foot and mouth disease. The gangrenous results were later found to be the symptoms of ergotism, a poisoning by the fungus ergot which contaminates rye and other grains. Until that incident, there was little interest in indigenous poisonous plants, but since then literally thousands of scientific studies of poisonous plants have been published in the United States.

Despite that fact, not all plants designated as poisonous in this country have been shown experimentally to be so. Much of our contemporary information still stems from older European sources. Even in "reputable" publications of the past few years there appear distinct contradictions as to whether, or when, or how, or what parts of given plants are toxic.

Socrates and the poison hemlock, and the accidental overuse of medicinal plants are both examples of man bearing the brunt of toxic plants. But cases of human poisoning are infrequent, the major importance of poisonous plants being in livestock poisonings. Plants may kill outright or may simply interfere with meat or milk production, with the incidence greatest during the winter and early spring, or on overgrazed land. The conditions at these times and places force animals to feed on the less palatable toxic species. Following are a few of those plants found in Virginia that are toxic to man or to man's livestock.

Jimsonweed (*Datura Stramonium*) has been known as a poisonous plant from ancient times, and decoctions of it were frequently employed to produce desired poisonings. It is a coarse annual, 1 to 5 feet tall with dark green, coarsely toothed leaves, reddish stem, and large, white, tubular flowers. This plant was introduced into America early in the colonial days and can now be found throughout much of the country, growing in waste areas and overgrazed pastures. Because it is an annual, jimsonweed is easily controlled by cutting before seeds have matured.

The name "jimsonweed" is a corruption of an earlier name—"Jamestown weed." This latter name was derived when the plant was employed to produce mass

Poke

poisonings of soldiers sent to Jamestown in 1676 to quell the Bacon rebellion. Other names by which this vile smelling plant is known include apple of Peru, devil's trumpet, mad apple, and stink apple. Because of its rank odor, livestock usually avoid the plant.

All parts of jimsonweed are dangerously poisonous and should be in no way consumed. In the past, many individuals were poisoned by using "tea" from this plant to treat asthma. Children are sometimes attracted by the showy, long tubular flowers and are poisoned by sucking nectar from the base of the corolla tube. The fruits, spiny capsules, may also be objects of fascination to children and even adults; but do not sample the jimsonweed fruits for they are as deadly as the other parts of the plant. How dangerously poisonous this plant is may be realized by the small amount of the crude leaf which is fatal to a child; this amount is less than a twentieth of an ounce.

The poisonous principles contained in this plant are alkaloids. These chemical substances can be refined and beneficially employed in the practice of medicine, but home preparations seldom contain the proper dosage and are extremely dangerous.

Close relatives of the jimsonweed include tobacco and many important food producing species, such as the tomato, potato, egg plant, and pepper. These edible nightshades contain alkaloids, but these are restricted to parts of the plants which are not usually consumed. Tomato vines, potato vines, and even green, sunburned potatoes are all poisonous. Interestingly, tomatoes were for many years grown for their ornamental beauty and not for food. At that time tomatoes were considered poisonous and were known as love apples.

Bittersweet

Another plant of the nightshade group held in ill-repute is European bittersweet (*Solanum Dulcamara*). This is a slender, woody vine up to 6 feet in length with opposite, dark green leaves of variable outline. The flowers are small and dark blue or deep purple. The fruits of bittersweet are berries, bright red when ripe, that hang in clusters like small grapes.

The berries are reputed to taste first sweet and then bitter. In fact, the Latin name literally means sweet-bitter, the reverse of the common name. Sampling the berries to confirm or deny the reputed taste is certainly not to be recommended since they are indeed poisonous. Children should be cautioned about sampling attractive fruits and berries or any plant part unless they are certain as to the plant's identity.

The berries of bittersweet and actually the whole plant are very attractive; but to prevent accidental poisonings, it should be removed if found growing near your home.

White snakeroot (*Eupatorium rugosum*), although probably not widely known, is a very infamous plant of early American history. Since the eighteenth century, people in certain areas of the United States suffered from a mysterious disease which was characterized by weakness, prostration, and nausea. In certain areas it reached epidemic proportions and sporadically caused loss of human life second to no other disease (Kingsbury 1964). The disease was so severe in some areas that the human population was reduced to below half

 (Continued from page 19)

of the original number. In some instances, it resulted in the abandonment of whole villages since the disease was known to occur only in certain limited areas. Incidentally, this disease is thought to have been responsible for the death of Abraham Lincoln's mother.

The disease eventually became associated with the consumption of milk products from cattle that were ill. The disease in cattle was known as "trembles" from the obvious symptom, and in humans as "milksickness." Much speculation was advanced to explain the cause of the disease. The theoretical causes included poison ivy, spider webs, and bacteria.

Eventually the true cause of milksickness was discovered. The disease was found to result from the ingestion of milk, butter, and possibly meat from animals that had themselves been poisoned by white snakeroot. The plant contains a toxic substance that is fat soluble and accumulates in the animal's body and milk fat. Normally, cattle find snakeroot distasteful but will consume it when mixed in hay with other forages. Large amounts may also be consumed when the pasture is overgrazed and the more palatable plant species are scarce.

Disregarding its infamous past, white snakeroot is a very attractive plant. It is a perennial, growing 3 or 4 feet tall in most open woods, especially in moist areas. The leaves are 3 to 6 inches, opposite, and with sharply serrate margins. The flowers are small, snow white, and occur in composite heads. The plant is quite showy when flowering in late summer. Although snakeroot may be esthetically pleasing, it should be pulled and left in the sun to dry when found growing in pastured areas. The danger of milksickness is less now because milk from many areas is combined before commercial processing. The threat, however, still exists on small farms where milk is produced for family consumption.

Poison hemlock (*Conium maculatum*), the probable bane to Socrates, (Kingsbury, 1964), is a tall (4–10 ft.) plant of lacy fern-like appearance. Coming to the United States as an alien of European origin, this plant is now common throughout most of the country. It is distinguished from the related wild carrot by its purple-spotted and grooved stem (as opposed to the hairy stem of *Daucus Carota*), and a sparser white flower cluster. The fern-like leaves account for one of its common names, California Fern.

Poison hemlock is sometimes fatally and mistakenly identified as anise or parsley with the subsequent consumption of the seeds or leaves. Its high toxicity is primarily due to the presence of at least five alkaloids of similar structure. At times, nitrates may also accumulate to toxic levels. The alkaloids are similar in structure and activity to nicotine, and cause an initial stimulation followed by depression of the central nervous system. Death occurs from respiratory failure.

Like poison hemlock, corn cockle (*Agrostemma Githago*), an alien from Europe, is now scattered along the paths of international commerce. Cursed as a weed at least from biblical times, corn cockle matures and is harvested along with wheat. The seeds contain saponin, a material which foams like soap when shaken in water. Consumption of the seeds results in severe gastroenteritis; death, which has been recorded in poultry, horses, cattle, pigs, and man, is apparently the result of the lysis (breaking down) of red blood cells.

Poke (*Phytolacca americana*) is one of those plants which may be found in three types of plant guides: medicinal plants, edible plants, and poisonous plants. Its presence in all of these lists at one time reinforces the well-known principle of "too much of a good thing." *Young* shoots (poke salad) make edible cooked greens, but the cooking water should be discarded. As a medicinal plant, poke is used as an emetic and a purgative, and the dried roots are claimed to be a valuable treatment for hemorrhoids.

The attractive berries are rapidly eaten without apparent harm by wild birds, but reports that they have resulted in human fatalities are enough to make one appreciate them without eating them. Toxicity of the plant increases with maturity; since the most toxic part of this plant is the root, effects on livestock are uncommon except, perhaps, in the farmyard rooter, the pig.

Wild plants provide many pleasurable moments by their beauty and can serve as an emergency food source to the outdoorsman who knows which are palatable and safe. Knowledge and caution are the keys to the safe use and enjoyment of wild plants. For further information on toxic plants, one may consult the following:

Kingsbury, John M. 1964. Poisonous plants of the United States and Canada. Prentice-Hall, Inc., Englewood Cliffs, N.J. 626 pp.

PREHISTORIC PASTIME

By PETE ELKINS
Fredericksburg

Jack Mitchell was right. They were all around the boat. Long, brown scaly creatures rolling in the dark evening water of the Mattaponi near Walkerton. Some were almost three feet long, evil and lean shadows, appearing then disappearing below the surface. My spinning rod was forgotten as I stared at a suspended fish ten feet from the boat. The gar wasn't pretty. There was nothing graceful about the rough, toothy beak, but the body was thick and muscular. I remembered the rod in my sweaty grasp.

The lure landed a foot in front of the scissored maw with predictable results. After a short dash at the lure, the gar flared off to the left and disappeared into the darkness. I found it hard to believe that I was actually trying to catch a gar on spinning tackle. Jack had caught one the day before, and had lost several others. His description of the resultant battles was enough to prompt me to join him the next day for a foray into prehistoric times.

Lepisosteus osseus, the longnose gar, is a living fossil, a relic of the ancient race of fishes. The gar in the Mattaponi once lurked under the leathery shadows of pterodactyls. Dinosaurs knew the gar. The dinosaurs and other creatures of the steaming Mesozoic passed, with only fossils to mark their path. But the gar survived, in company with his hoodlum companion, the bowfin. Tough, durable, and predacious, the gar outlived his fossils.

Jack and I had passed the early part of the August afternoon with the abundant white perch, yellow perch, pumpkinseeds, and redbreast sunfish of the river. The hand-sized battlers were enthusiastic about small spinners and plugs. On ultra-light spinning tackle, they provided excellent sport. Still, farther up the river, past the bridge, below the high chalky cliff, were the gar. Soon we had all the sunfish that conscience would permit.

"Let's see if they're there," Jack suggested as he cranked up the outboard. I nodded agreement, enjoying the coolness of the spray across the bow of the powerboat.

Jack cut back on the throttle as we came around a thick green island.

"There," he pointed at a wide bend in the river where large fish rolled constantly and lazily in the darkness of the cliff. Jack eased upriver of the contented gars, then killed the motor. The tide carried us slowly down toward the center of the scattered gar assembly. Then we were in them. Great foaming splashes alternated with soft swirls of pale gar belly. Jack started casting a Mepp's comet. I tried a gang-hooked plastic worm.

They hit Jack first. The strike came with a sudden tortured whine of the outclassed reel. For long moments, the gar was in complete control. Ancient muscle tested modern fiber glass, and the muscle almost won. When the gar neared the boat, I realized that Jack expected me to land the fanged fish. Without a

net or adequate courage, I pondered the situation while the gar did primeval belly flops beside the boat and Jack waxed frantic in the boat. Clawing through my tackle box, I clutched a short-handled gaff. I lunged for the gar, only to watch the gaff's point bounce harmlessly off the shell-like skin of the irritated gar. I finally found a soft spot under the gills, and wrenched the beaked creature into the boat. The gar promptly tried to smash its way through the bottom of the boat while Jack tried to climb atop the motor. Afraid that Jack's sudden egress to the rear might unbalance the boat, I retreated to a precarious perch on the bow. Soon, the gar accepted the boat and settled down.

The long, slender beak identified it as a longnose gar, common in Virginia waters. Although the longnose occasionally enters brackish water, it rarely trespasses into salt water. To another gar, this specimen might even have been handsome with its dark green back and silvery sides. Dark spots interrupted the yellowish fins and tail. At first glance, a gar appears a dull, sluggish fish, content to doze near the surface dreaming Mesozoic dreams. Once hooked the illusion is instantly shattered.

Gars are efficient predators, swift and powerful as the situation dictates. On a rod, they will bulldog in strong, surging sprints and even thrash clear of the water in primeval savagery. Lest I be misunderstood, I'm not extolling the gar above other fish as a sporting proposition. Yet, the gar and other rough fish serve a useful function in the ecology of larger waterways. When the bass are glassy-eyed from staying up all night chasing frogs and refuse your best daylight offerings, the gar can be a great challenge.

Longnose gar are often hefty, sometimes exceeding five feet in southern waters. The record longnose

Before resorting to gar, Jack Mitchell and the author collected a sampling of the Mattaponi's sunfish and perch population.

A gar takes the bait while the angler freespools line to allow the prehistoric fish time to swallow the hook.

taken on sporting tackle was a 50 pound 5 ounce specimen taken in Texas in 1954. However, most gar in Virginia will weigh less than ten pounds.

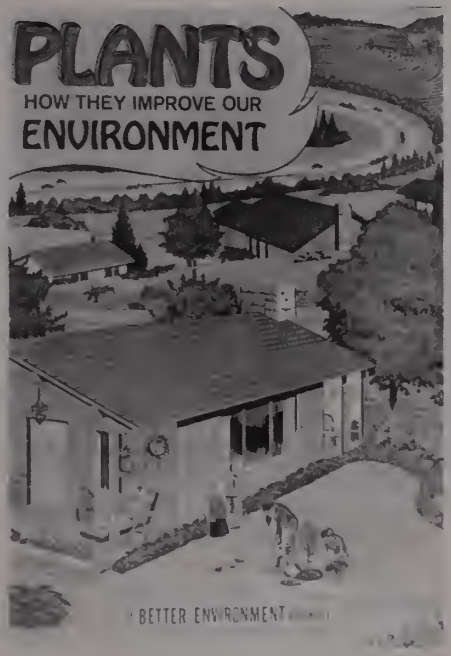
The gar will readily strike both artificial and live bait. Flashy lures seem to produce most strikes, as does a fairly rapid retrieve. Setting the hook with an artificial can be a problem because both jaws of the longnose are heavily toothed and bony. A relatively stiff rod makes hook setting easier, but takes some of the fight out of the fish. Since I like to use ultra-light tackle, I found live or cut bait easier to handle. By allowing the gar to swallow the bait, I could securely hook the rampaging fish even with a willowy rod. Of course, a short "shock leader" of heavy monofilament or wire is necessary to prevent frayed and cut lines. Since gar feed close to the surface, a plastic floater or "bobber" set to suspend the bait a foot or so deep adds to the productivity and excitement of gar fishing. Watching a gar longer than your arm take a bait is the stuff of suspense. First the gar appears as a torpedo shadow with a skinny nose. Then the floater jiggles slightly, twitches, and goes under. The floater glides slowly, steadily, just below the surface as the gar moves away with the bait. After a series of stops and starts, the gar will eventually swallow the bait. Then is when you should set the hook. When is then? I tried hitting right away, counting to ten, waiting for almost five minutes, and virtually every technique resulted in equal numbers of missed and hooked fish. I can only advise you to experiment and then use the method that works best.

When the afternoon was over, Jack had proven that gar will hit artificial lures, and I had discovered another feature of the always mysterious Mattaponi. Gar will never replace bass or other game species, but on an August afternoon when other species are seeking shade, the gar will go a round with you. If the gar refuse to cooperate, I've heard rumors of *coelecanths* farther down the river.

Edited by ANN PILCHER

Happy-Go-Lucky 4-H'rs helped unload 1450 trout and put them in the Blackwater River in May when the Game Commission stocked that river, Runnett Bag and Maggodee Creeks in Franklin County with a total of 4350 fish.

Photos courtesy *Franklin News-Post*, Rocky Mount



One of 8 booklets published and distributed by the Soil Conservation Society of America (7515 N.E. Ankeny Rd., Ankeny, Iowa 50021). Cost—$.25 each, or less when ordered in quantity. Fun to read—yet factual. Other titles include "The Story of Land," "The Wonder of Water," "Help Keep Our Land Beautiful," "Food and the Land," "Making a Home for Wildlife on the land," "Working Together for a Livable Land," "The Earth, Our Home in Space."

Litterbug

L is for the lazy, that throw trash on the ground;
I is for the ignorance, that is so often found.
T is for the trouble, that is caused by their neglect;
T is for the time it takes, to keep their trash in check.
E is for the effort, that people who care take;
R is for the risk we take, when we make these mistakes.
B is for the beauty, with which some folks never bother;
U is for the ugliness, that we all leave each other.
G is for the guilty, who do all within their power;
To see how much they can litter this great land of ours.

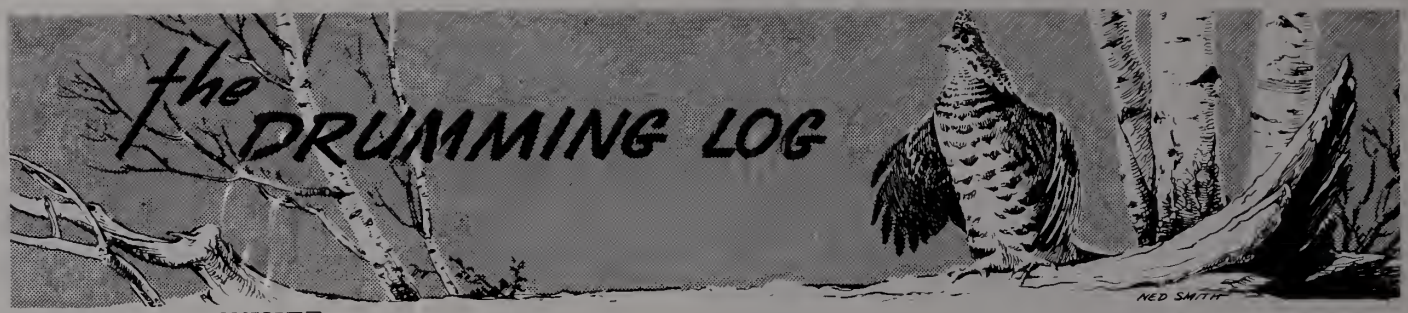
—JEFFERY T. WASKEY and
ELLA LOU MORRIS
7th grade, Big Stone Gap
Elementary School

(Poem printed above was the spontaneous outcome of a study of ecology and pollution in science class taught by Mr. David Hart, participant in a program sponsored by the Urban/Rural School Community Council in cooperation with the College of Education, VPI & SU, and Wise County schools.)

Fun Name: Serious Workers

Members of the Happy-Go-Lucky 4-H Club of Callaway undertook a wildlife management program this spring with the cooperation of the Commission of Game and Inland Fisheries. They invited Game Warden Gordon Preston to meet with them for several weeks as they studied such subjects as plants, fish, and conservation. Mr. Preston brought each of the youngsters a Game Commission furnished bag of wildlife seed (mixture of peas, milo, buckwheat and other plant species) for planting to provide food for birds, deer, turkey, rabbits and other wildlife. The warden plans to meet with the club periodically for follow-up films, lectures and field trips.

Callaway 4-H'rs, with game wardens Gordon Preston and J. A. Tramel, prepare for wildlife seed planting: (front) Reuben Cooper, Rita Thompson, Ellen Barnhart and Jackson Green; (back) Claude Green, Jeffrey Cooper, Brenda Brubaker and Tanya Bennett.



Edited by MEL WHITE

Dad's Big Bass

This largemouth bass is quite a handful for J. T. Edwards, Jr. Recently caught by his father in a private pond in Louisa County, the big fish weighed 10 pounds 12 ounces.

One of Three

This 19-pounder is one of three turkeys taken during the spring season by K. B. Weakly of Reva. Mr. Weakly, who has been hunting turkeys for 40 years, sees an improvement in the turkey population since spring hunting was initiated.

Wilderness East

Eleven million acres of roadless National Forest land are being studied as possible additions to the National Wilderness Preservation System.

Two of the areas to be studied are in the South—the 14,935 acre Joyce Kilmer-Slickrock area on the national forests in North Carolina and the 22,000 acre Bradwell Bay area on the national forests in Florida.

During the study period and until final decisions are made as to their disposition, the study areas will be managed to preserve their wilderness characteristics.

New Insect Book

Trouble with insect pests? A 20-page booklet offered by the National Wildlife Federation could solve many of your problems. Called "Pesticides and Your Environment," it is a handy guide especially for the home gardener.

The booklet contains several suggestions on controlling pests without using insecticides. For example, by cultivating flowering parsley in the yard, the home gardener can encourage predatory insects which in turn will help control aphids and other soft "bugs."

Where pesticide seems necessary, the booklet suggests materials which have the least damaging effect. There is also a summary of insects each helps control.

Single copies are available from the National Wildlife Federation, 1412 Sixteenth St., Washington D.C. 20036.

The Hunter's Obligation

Hunting is to some a seasonal privilege, to others a basic right, but right or privilege, protecting the sport is a year-round obligation. The stream of misinformation from anti-hunting groups doesn't stop when the season ends and the hunter puts up his guns until next year. And the hunter's concern for the future of his sport shouldn't stop either. A new "Hunters Pay for Conservation" kit offered by the National Shooting Sports Foundation provides a powerful way for the sportsman to make his position known. It includes a handsome, multi-colored 4" brassard for his hunting coat, a matching decal for his car and a pamphlet outlining the important contributions hunters have made to conservation. Prices are $2.00 for single kits and $36.00 for packs of 24. Order from the NSSF, 1075 Post Road, Riverside, Conn. 06878, attention John Chatellier.

Wardens In School

Game Warden Supervisor Gerald Simmons (center) instructs a group of game wardens at a recently completed training session. The new wardens are now in the field undergoing a year's on-the-job training provided by wardens and supervisory personnel.

Know your WARDENS

Text and Photos by F. N. SATTERLEE
Information Officer

JOSEPH R. BELLAMY

Assistant Supervising Warden (Education)
Patrick Henry District

Joe Bellamy was one of twin boys born to Mr. and Mrs. Hunter Hall Bellamy, Sr., at Keswick Plantation on the James River in Powhatan County. He lived in this rural area until he was five years old at which time the family moved to Midlothian, Va. During these early years Joe, his twin brother, and the two other brothers in the family spent lots of time hunting and fishing and learning about the woods and wildlife from their father who was an expert outdoorsman.

Mr. Bellamy graduated from high school in Midlothian and served in the U.S. Army during World War II. After the war he played professional baseball as a catcher, working with teams throughout the United States and Canada. For a time he worked for the Dupont Company, and in 1954 was accepted for employment as a Game Warden with the Commission of Game and Inland Fisheries. His initial assignment was to Chesterfield County.

Joe was promoted to Area Leader Warden on November 1, 1966, and in September of 1972 to his current position of Assistant Supervising Warden (Education) for the Patrick Henry District. He finds that the most satisfying aspect of his work is being able to work with people, both children and adults, helping them to be safety-minded and to appreciate the wonders and rewards of our wildlife heritage.

He and his wife, the former Betty Page Leneave of Chesterfield, have two daughters and make their home on Dunraven Road in Richmond. They are members of Branch's Baptist Church in that city.

ROBERT L. GRIFFITH

New Kent County Game Warden

New Kent County, Virginia, was the birthplace of Bob Griffith, and as a youngster the influence of growing up on his father's 500-acre farm was to have a lasting effect. Not only did he learn to understand farm animals and crops, but also to love and appreciate wild birds and animals and nature in general.

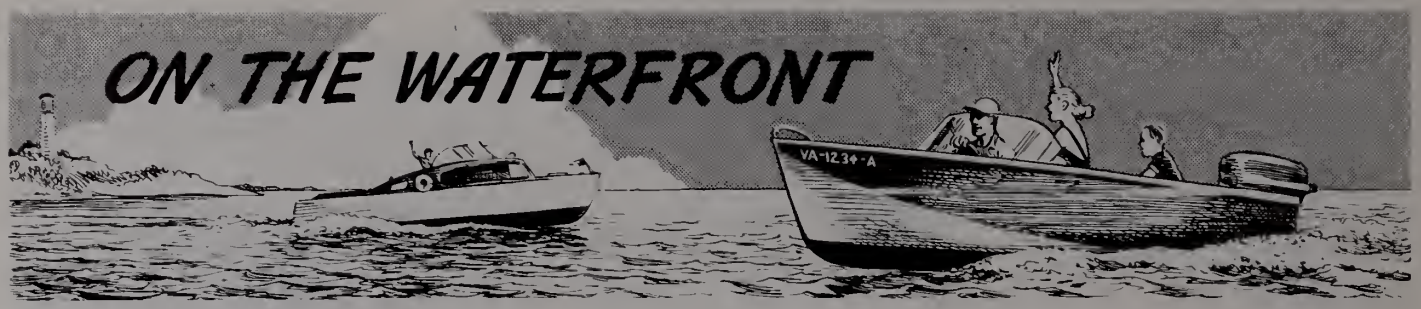
A tragedy early in his life also had a lasting effect on Bob. When he was just a child, his brother was killed in a needless hunting accident. Over the years this loss has remained with him and has been a driving force in his tireless efforts to promote and conduct hunter safety programs.

Following graduation from New Kent High School, Mr. Griffith worked for the Virginia Department of Highways as a carpenter. In 1944 he was drafted into the U.S. Army. He served in the Philippines with the Americal Division and for 11 months was part of the Army of Occupation in Japan.

Following his discharge he returned to Virginia determined to return to carpentry work, a pursuit he enjoys. However he was approached about work as a Game Warden, applied, was hired in June 1947 and assigned to duty in New Kent County.

Bob enjoys his work as a Game Warden and in addition to his special interest in youth and the hunter safety training programs, he thoroughly enjoys working with all kinds of people. One of the little known facets of his personality is that he is truly a *gentle man* in spite of his strict advocacy of law and order. For example he has on many occasions, after having handed out a citation for the violation of a game law, turned right around and from his own pocket financed a subscription to *Virginia Wildlife* magazine for the violator.

Bob was chosen as Virginia Game Warden of the Year for 1973, an achievement of which he is modestly proud. He is married to the former Mary Lacy of New Kent, Va. Bob and Mary have one daughter and they make their home in Quinton, Va.



Edited by JIM KERRICK

Small Sailboats Form Boating's "Fun Fleet"

The "now generation" is involved today. It votes, runs for office, is concerned about ecology.

Because of this new consciousness, many people are revamping their lives. Physical fitness, as advocated by the late President Kennedy a decade ago, is now becoming an integral part of people's lives.

Tennis is catching on all over, bicycling is the craze of city dwellers, and boating has become the thing to do for those who feel a desire to get away from it all.

According to the Let's Go Boating Committee, whose intent is to get people out of their routine habits and onto the water, boats are cropping up on lakes, rivers, bays and along the coastal waterways in record numbers.

Youth has been a leader of the movement to do something instead of sitting and doing nothing. Boating, which offers such a complete change of life from the hot teeming city, the monotony of a job and the everyday family pressures, is fast becoming an exciting part of the lives of the youth of America.

Television, they say, is geared to the young who enjoy basic comedy, drama and fun entertainment. The boating industry has also built boats designed with the young people in mind.

Case in point is the large fleet of small sailboats comprised of daysailers and sailboards.

The enormous attraction of this type of sailboat, sometimes called the "fun fleet," is a combination of low initial cost, practically no upkeep cost, portability and ease of operation.

Add the fact that although these boats are probably the best for a beginner, they are also some of the most competitive when operated by an expert.

The main reason young people like them is they are among the most enjoyable types of pure pleasure boats yet developed.

Assembling one is rather easy. Operating one takes only a little practice. The rigging is relatively simple to control. The sum total of a typical sailboard, for instance, are a hull, short mast and yard, and boom to stretch the lateen-rigged sail, a daggerboard for stability and traction, and a rudder for control.

A sailboard is usually constructed of fiber glass and costs from as little as $100 up to more than $700. It will range from 10 feet to 16 feet long and can weigh as little as 50 pounds. They can be sailed alone, but most sailboards can take one crew member.

Daysailers are larger than the sailboards. Prices also are slightly higher than the sailboards, starting at about $500.

Beginning sailors don't have to worry about piloting the fun boat. Since there is only one sail, controlled by one sheet, these small craft offer a rookie a chance to practice and perfect the art of sailing without having a thousand different things going on at once.

Most of the boats are non-sinkable. If one of them does dunk you, you can right it quickly.

Usually you don't even have to lower the sail. Merely swim around to the other side, grasp the high side of the hull and put both feet on the daggerboard and lean back. She'll gently right herself until upright.

Then all you do is climb aboard, take up the sheet until the sail fills, and sail away.

In the hands of an expert, these boats become one of the most competitive of all class racing sailboats.

Photos courtesy H. A. Bruno & Associates

Bird of the Month:

Little Blue Heron

By JOHN W. TAYLOR
Edgewater, Maryland

AMONG the other names given the little blue heron are "white heron" and "little white heron." These monickers are applied to the immature of this species, which is nearly egret-white for a period that may last a year or more. Many of these young birds are in fact mistaken for snowy egrets, especially by the novice, seeing them for the first time.

More experienced ornithologists look for the uniformly greenish legs and feet that distinguish at once this heron from the black-legged, yellow-footed snowy egret. The slate-blue bill of the heron is another identifying feature, since the snowy's bill is jet black, often with yellow at the base. Too, the white of the young heron is duller, with a bluish cast unlike the dazzling white of the egret. Young little blues in moult, just prior to attaining the adult plumage, present a clownish, pied appearance, the new dark feathers contrasting oddly with the white juvenal feathers.

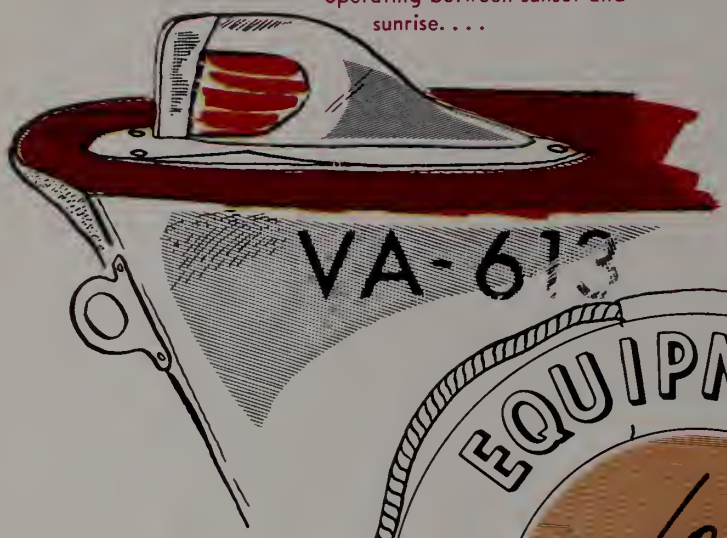
Strangely, many naturalists are more familiar with the young white little blues than they are with the adults. Not only are the white birds more conspicuous, but they range wider and occupy a greater variety of habitats. The young have a strong instinct to wander northward and inland after the nesting season, often as far as New England and southern Canada. Adult birds seem to prefer the coastal marshes and islands, almost never venturing north of the nesting range which extends to New Jersey, and rarely visiting inland ponds and streams like the immatures do.

In Virginia, there are little blue heronries on both sides of the Eastern Shore peninsula and on the lower Potomac. They are known to have bred at one time along the Chickahominy and near Fentress in Norfolk County, but at present they usually select coastal islands with a low growth of scrubby vegetation. Farther south they inhabit woody swamps and even pine forests near water.

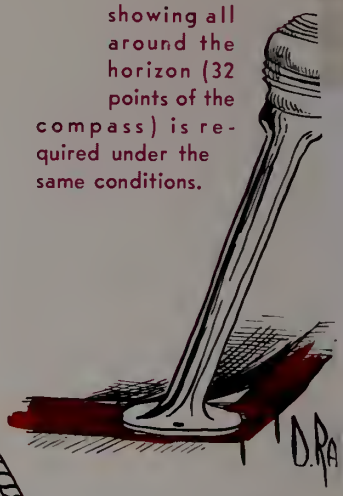
In no plumage does the little blue have the long "aigrettes" so desired by the plume hunters early in the century, so they did not suffer the decimation that so reduced the numbers of the snowy and American egret. Nevertheless, the protection afforded the other herons helped bring the little blue back from a dangerously low population ebb. Harassment and disturbance of nesting grounds by the plume hunters made breeding impossible for even the birds that weren't killed, and for a while (during the period 1920-40) little blues were rarely seen this far north. Now they have reoccupied old haunts and seem to be colonizing new territory.

EQUIPMENT for Safe BOATING

A combination BOW LANTERN showing red to port and green to starboard is required on motorboats under 16 feet in length, operating between sunset and sunrise. . . .

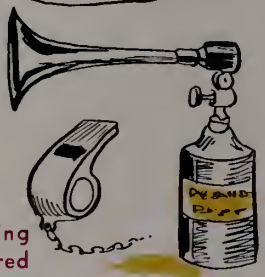


Also a white stern showing all around the horizon (32 points of the compass) is required under the same conditions.



If the motorboat has an enclosed fuel tank or is over 26 feet long, a fire extinguisher is required by law.

A U. S. Coast Guard approved lifesaving device is required for each person on board. On boats 16 feet and over these must be wearable. At least one throwable device is also required.

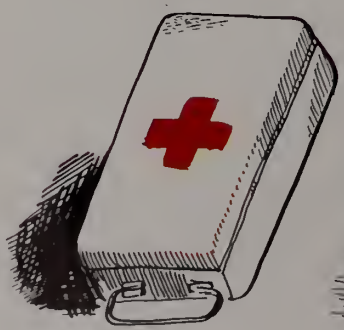


A sound-making device is required aboard motorboats over 16 feet.

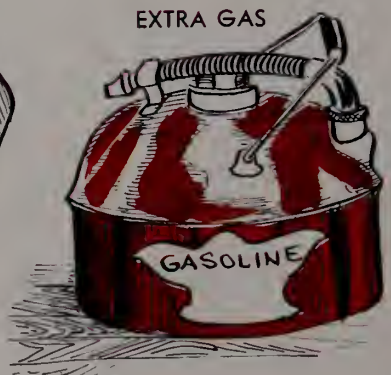
The items identified by red type are as will be required October 1, 1973. Items in black type are recommended but not required.

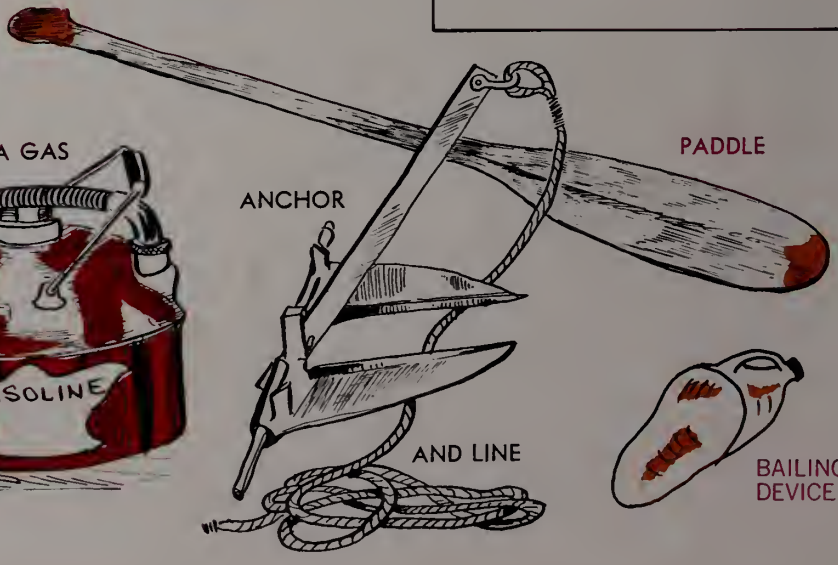
The safe skipper also has aboard . . .

FIRST AID KIT



EXTRA GAS





ANCHOR

PADDLE

AND LINE

BAILING DEVICE